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THE MOLLUSCA OF MONTE SANO, ALABAMA.

BY H. E. WHEELER.

Monte Sano is one of the most picturesque spurs of the Cumberland Plateau. It is situate in Madison County, Alabama, just east of the Huntsville meridian, and rises nearly 1000 feet¹ above the valley in which the city of Huntsville lies.

Going east from the heart of Huntsville the pike first crosses a ridge known as Little Mountain, the home of many a choice shell, and then winds its way up the noble brow of Monte Sano, and around to its eastern slope, giving an all-around view of the splendid valleys below from the south and west to the north and east. From the city the distance is nearly five miles. On account of its salubrious climate it is far famed as a summer resort.

In all this limestone region many "Big Springs" are to found. They issue from large caves, or rise from the foot of a bluff, continuing oftentimes on the surfaces the course of subterranean creeks, perhaps connecting some of the smaller rivers at their sinks with the Tennessee River which is but ten miles distant from Huntsville on the south. These springs furnish the coldest water in the state. The valleys of the table lands are the work wholly of erosion,² and

¹ The elevation of Monte Sano is given on the topographic sheets of the U. S. Geological Survey as 1600 feet.

² See McCalley, Valley Regions of Alabama, I. p. 14 seq.

are everywhere developing many deep and shaded coves, which for the trained collector are a thing of beauty and a joy forever.

The mountain streams of north Alabama flow through a region as attractive to the tourist as it is fascinating to the collector. Who knows what knowledge lies buried in the dashing waters of Hurricane Creek, or waits some intrepid wader in the numerous shoals of Flint and Paint Rock rivers?

Monte Sano is already a classic collecting ground. Years ago it was made famous by its subcarboniferous fossils, and many a botanist has climbed with eagerness its precipitous slopes. Here the curious Chittanwood (the Great American Smoke Tree)—*Cotinus cotinoides* (Nutt.) Britton, whose type locality is the Grand River, Arkansas, finds a congenial home.¹ It is not improbable that it was rediscovered by Buckley on this very mountain.

But to the conchologist Monte Sano is chiefly interesting as the type locality of three land shells, all of which were introduced to science by that indefatigable naturalist, Professor Herbert H. Smith, whose versatility of mind, keenness of vision, and scientific caution universally commend him.

Carychium nanodes Clapp,² is one of the smallest, if not the smallest, of all land shells. It prefers the damp woods, hiding between half-decayed leaves in sheltered situations, near the mountain top. *Vitrea levisiana* Clapp,³ is still to be considered one of our rarest shells. The yellow animal is clearly visible through the thin white shell, and when crawling on the under surface of the dull-colored rocks, which it seems to prefer, makes a most pleasing picture. *Polygyra smithii* Clapp,⁴ has a very evident fondness for mud and clay. Even when it shows itself on some damp day in the crevices of an old wall, or on a pile of rocks, its hirsute epidermis betrays its domicile, and often, under logs, it is found partially buried or "balled" in clay. When cleaned up, however, by gently brushing under tepid water, a method which preserves the hairs (and for

¹ Mohr, *Plant Life of Alabama*, pp. 34, 84, 600, and Plate VI. See also Gattinger, *Flora of Tennessee*, p. 114, where for "Limestone County," read "Madison County."

² NAUTILUS, Vol. XIX, p. 91.

³ NAUTILUS, Vol. XXI, pp. 129, 130.

⁴ NAUTILUS, Vol. XIX, pp. 73, 74.

which important discovery we are also indebted to Professor Smith), it makes a most attractive appearance.

The following list cannot be complete, or even nearly so, as the writer was able to do only occasional field work in a busy pastorate of a single year at Huntsville. The species listed were collected partly on Monte Sano and partly from the contiguous territory. The determinations have been made largely by Mr. Bryant Walker, although I am indebted to Mr. Geo. H. Clapp and to Professor Smith for much help.

GASTROPODA.

Helicidæ.

Helicina orbiculata Say. Common. Thousands may be gathered on damp days from the cedar trees or from the moss-grown limestone rocks. The *Pyramidulas* and *Pupidæ* are also lovers of cedar.

Helicinidæ.

Polygyra plicata Say.

Polygyra troostiana Lea. This and the preceding species are gregarious. But the one species is not apt to be found in association with the other.

Polygyra fraudulenta Pils. Common on all the mountains, but *Polygyra tridentata* Say, though probably here, was not collected.

Polygyra inflecta Say.

Polygyra albolabris Say.

Polygyra fuscolabris Pils. The racial validity of this species impresses the collector more than it would the student within doors. It is a shell of the mountain tops, choosing the crevices of large rocks and cave entrances preferably, though sometimes found under logs. It is not easy to bridge the gap between this and *albolabris* by a series collected in the same locality. The pink lip, however, is not a constant character, being nearly as often white as pink. But its larger size, splendid symmetry and richer color readily endorse it for specific rank.

Polygyra zaleta Binn. More common on the lower ridges. Here it often develops a lilac "bloom." *Polygyra elevata* Say, not found on Monte Sano, is reported from Gurley, Alabama, collected by Prof. Smith.

Polygyra palliata Say. Collected by Prof. Smith in the lowlands south of Huntsville, July, 1910.

Polygyra obstricta Say.

Polygyra obstricta carolinensis Lea. Between the species and the variety there is no dividing line.

Polygyra sargentiana J. and P. A young shell from the south end of Monte Sano is certainly this species. At Gurley, ten miles east of Huntsville, a smooth form of *sargentiana* is common, and will likely be found also on Monte Sano.

Polygyra appressa Say. Quite common in gardens.

Polygyra appressa perigrapta Pils. *Appressa* is the common form in this region, contrary to the usual collector's experience in North Alabama.

Polygyra thyroides, Say.

Polygyra spinosa, Lea.

Polygyra stenotrema, Fer.

Polygyra hirsuta, Say var. Differs constantly from typical *hirsuta* by its smaller size and pronounced apertural features.

Polygyra fraterna aliciae, Pils.

Polygyra rugeli, Shutt.

Polygyra smithii, Clapp.

Bulimulidæ.

Bulimulus dealbatus, Say.

Pupillidæ.

Strobilops labyrinthica, Say, var.

Pupoides marginatus, Say.

Bifidaria procera, Gld.

Bifidaria armifera, Say.

Bifidaria tappaniana, C. B. Ads.

Vertigo rugosula, Sterki.

Vertigo ovata, Say.

Vertigo concinnula, Ckll. Very rare. Previously reported only from the Rocky Mountain region; determined by Dr. Pilsbry.

Circinariidæ.

Circinaria concava, Say.

Zonitidæ.

Omphalina kopnodes, W. G. Binn. This species attains its maximum development in this region. It is an abundant species, preferring the lower ridges rather the mountain-tops.

Mesomphix lævigata, Pfr.

Mesomphix lævigata lator, Pils. Save in a characteristic green color, this subspecies is almost inseparable from *lævigata ipse*.

Vitrea carolinensis, Ckll.

Vitrea indentata, Say.

Vitrea lewisiana, Clapp.

Vitrea (Paravitrea) capsella, Gould.

Vitrea radiatula electrina, var. *circumstriata*, Taylor. This shell has also been identified from Arkadelphia, Arkansas by Mr. George H. Clapp. The species may be found all the way between, but Arkansas is at present its southwestern limit.

Vitrea (Paravitrea) multidentata Binn. This extra-limital locality for *multidentata* evidences the keenness of Mr. Smith's eyes. It is very rare, and found only in sequestered cleavages of the rocks on the mountain terrace.

Euconulus chersinus Say.

Euconulus sterkii Dall. Only one specimen found.

Zonitoides arboreus Say.

Zonitoides minusculus Say.

Zonitoides milium Morse.

Gastrodonta suppressa Say.

Gastrodonta interna Say.

Gastrodonta ligera Say.

Gastrodonta glaris Say.

Gastrodonta demissa Binn.

Gastrodonta collisella Pils. Rare.

Endodontidæ.

Pyramidula alternata Say.

Pyramidula cumberlandiana Lea. Found on Smither's Mountain, a peak five miles northwest of Huntsville. Not on Monte Sano.

Pyramidula perspectiva Say.

Helicodiscus parallelus Say.

Punctum pygmaeum Drap.

Succinea sp.?

Lymnæidæ.

Lymnæa humilis Say.

Lymnæa columella Say.

Lymnæa obrussa Say (= *desidiosa* Binn.).

Ancylus sp.? Braham's Springs, west of Huntsville.

Ancylus sp. nov. Mastin's Lake, two miles north of Huntsville.

Ancylus sp. Collected from Braham's Springs, west of Huntsville.

Planorbis parvus Say.

Planorbis parvus Say, var. A minute form from Mastin's Lake, which may prove to be new.

Planorbis bicarinatus Say.

Planorbis alabamensis Pils.?

Planorbis trivolvus Say. Flat form.

Physidæ.

Physa sp. These shells collected in Mastin's Lake are probably *crocata* Lea (Walker), which is, however, only a form of *microstoma* Hald. (Crandall). See NAUTILUS, Vol. XV, p. 70.

Physa halei Lea. Braham Springs.

Physa distorta Hald. From Big Spring Creek.

Auriculidæ.

Carychium exile H. C. Lea.

Carychium nanodes Clapp.

Pleuroceratidæ.

Goniobasis striatula Lea.

Pleurocera excuratum Con.

Pleurocera brumbyi Lea. This and the two preceding species were collected from Big Spring Creek.

Pleurocera currierianum Lea. From Bird Spring.

In "The Fresh Water and Land Shells of Alabama," by Dr. James Lewis, M. D., *Goniobasis perstriata* Lea and *Goniobasis decampii* Lea are listed from Huntsville. But like many other species in our smaller streams, they may be already exterminated by the ducks and geese. *Campeloma lima* Anthony and *Somatogyrus currierianus* Lea are also given as coming from Huntsville, but I obtained no specimens.

Viviparidæ.

Vivipara contectoides Binn.

Campeloma coarctata Binn. (non Lea). From Bird Spring.

Pomatiopsidæ.

Pomatiopsis lapidaria Say.

Corbiculadæ.

Musculium elevatum Hald.

Pisidium virginicum Say.

NEW CALIFORNIAN MOLLUSCA.

BY WM. H. DALL.

During the later portion of the life of the late W. C. Goforth, he paid much attention to the natural history of the places in California which he visited, and made some collections which were transmitted to the U. S. National Museum after his death by a relative, Mrs. Emma C. Ingersoll. Among them were two or three small specimens of shells, supposed to have been collected at Monterey. Curiously enough, one of these specimens represents a species hitherto undescribed, and which it gives me pleasure to name in honor of the regretted collector.

Aesopus goforthi Dall, n. sp.

Shell smooth, slender, elongate, with inconspicuous sutures and about eight whorls; nucleus defective, smooth; subsequent whorls gradually increasing, moderately convex; color greenish-waxen with flammules of dark chestnut so arranged on the last whorl as to form two irregular bands, one above and the other below the periphery, which also show in the interior of the aperture and on the base of the pillar; the paler portion of the surface is also irregularly mottled with opaque whitish blotches. Aperture short, rather wide; the outer lip simple, sharp, smooth within; body and pillar smooth, with a thin wash of callus; canal short, wide, not recurved. Length of shell 13, of last whorl 6, of aperture 4 mm., max. diam. of shell 3.3 mm.

Type No. 249624, U. S. N. Museum.

While destitute of the spiral sculpture which marks many species of the genus, it is not without smooth congeners as, for instance,